

REMARKS

Applicants appreciate the Examiner's thorough consideration provided to the present application. Claims 1, 3, 5, 7-10, 17-21, 23 and 25-27 are currently pending in the instant application. Claims 2, 4, 6, 11-16, 22 and 24 have been cancelled without prejudice or disclaimer to the subject matter contained therein. Claims 1, 5, 7-9, 17, 18, 20, 23 and 25 have been amended. Claims 1, 5, 8, 17, 18 and 25 are independent. Reconsideration of the present application is earnestly solicited.

Applicants appreciate the courtesies extended to Applicants and Applicants' representatives during the personal interview conducted with the Examiner on April 7, 2004. During the interview the foregoing amendments to the claims were discussed with the Examiner. As discussed in greater detail hereinafter, Applicants submit that the foregoing amendments to the claims have obviated and/or rendered moot the rejections under 35 U.S.C. § 103.

Reasons for Entry of Amendment

As discussed in greater detail hereinafter, Applicants respectfully submit that the rejections under 35 U.S.C. § 103 are improper and should be withdrawn. If the present application is not passed to Issue, Applicants submit

that the finality of the Final Office Action mailed on April 14, 2004 should be withdrawn.

In accordance with the requirements of 37 CFR 1.116, Applicants respectfully request entry and consideration of the foregoing amendments as they remove issues for appeal (remove informalities and claims are cancelled) and place the current application in a condition for allowance.

Claim Rejections Under 35 U.S.C. § 103

Claims 5-6, 8-10 and 26 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Fumel et al. (U.S. Patent No. 3,988,521) in view of Geddes et al. (U.S. Patent No. 6,030,476). Claims 17-19 and 27 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Fumel et al. in view of Neale et al. (U.S. Patent No. 6,277,454). Claims 20-21 and 23-24 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Fumel et al. in view of Geddes, and further in view of Neale et al. Claims 1-3, 7 and 25 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Fumel et al. in view of Geddes. These rejections are respectfully traversed.

In light of the foregoing amendments to the claims, Applicants submit that these rejections have been obviated and/or rendered moot. Applicants respectfully submit that the prior art of record fails to teach or suggest each

and every element of the unique combination of elements of the claimed invention. In addition, Applicants submit that the Fumel et al. patent fails to teach or suggest all of the features of even the independent claims. In addition, Applicants submit that the remaining references of the prior art of record fail to teach or suggest the shortcomings of the Fumel et al. reference identified in greater detail hereinafter. Applicants submit that the amendments to the claims are fully supported by the original written description, including, but not limited to, original claims 1-27 and paragraphs 0035-0038 and 0044-0047 of the specification. Accordingly, these rejections should be withdrawn.

With respect to claim 1, the prior art of record fails to teach or suggest the combination of elements of the claimed invention, including the limitation(s) of "a foam layer being disposed along the interior surface of the paper stock layer, *wherein said foam layer is heat laminated foam formed from high density polyethylene, low density polyethylene, linear low density polyethylene, or oriented polypropylene; and a polyethylene barrier film layer being disposed along the interior surface of the paper stock layer and in continuous and direct contact with said foam layer and said paper stock layer, wherein the foam layer forms said innermost surface of said stock material.*" (Emphasis added) Accordingly, this rejection should be withdrawn.

With respect to claim 5, the prior art of record fails to teach or suggest the combination of elements of the claimed invention, including the limitation(s) of “a foam layer being disposed along the interior surface of the paper stock layer, *wherein said foam layer is heat laminated foam formed from high density polyethylene, low density polyethylene, linear low density polyethylene, or oriented polypropylene; a first polyethylene barrier film layer being disposed along the interior surface of the paper stock layer and in continuous and direct contact with said foam layer and said paper stock layer,* and a second polyethylene barrier film layer sandwiching said foam layer between said first polyethylene barrier film layer being disposed along the interior surface of the paper stock layer and said second polyethylene barrier film layer.” (Emphasis added) Accordingly, this rejection should be withdrawn.

With respect to claim 8, the prior art of record fails to teach or suggest the combination of elements of the claimed invention, including the limitation(s) of “*a thin polyethylene barrier film layer being arranged between said paper stock layer and said beverage containing space and forming said innermost surface of said container wall; and a heat laminated foam layer arranged along an interior surface of the paper stock layer and in continuous and direct contact with said polyethylene barrier film layer and said paper stock layer.*” (Emphasis added) Accordingly, this rejection should be withdrawn.

With respect to claim 17, the prior art of record fails to teach or suggest the combination of elements of the claimed invention, including the limitation(s) of *“a heat laminated foam layer being disposed along an interior surface of the paper stock layer; and a polyethylene barrier film layer being disposed along the interior surface of said paper stock layer in continuous and direct contact with said foam layer and said paper stock layer, wherein said foam layer forms said innermost surface of said sleeve.”* (Emphasis added) Accordingly, this rejection should be withdrawn.

With respect to claim 18, the prior art of record fails to teach or suggest the combination of elements of the claimed invention, including the limitation(s) of *“a heat laminated foam layer being disposed along an interior surface of the paper stock layer; and a first polyethylene barrier film layer being disposed along the interior surface of said paper stock layer in continuous and direct contact with said foam layer and said paper stock layer, wherein said foam layer forms said innermost surface of said sleeve; and a second polyethylene film layer sandwiching said foam layer between said first and said second polyethylene barrier film layers.”* (Emphasis added) Accordingly, this rejection should be withdrawn.

With respect to claim 25, the prior art of record fails to teach or suggest the combination of elements of the claimed invention, including the

limitation(s) of *“a thin polyethylene barrier film layer being arranged between said paper stock layer and said beverage containing space; and a foam layer arranged along an interior surface of the container wall and forming the innermost surface of said container wall, said polyethylene film layer being in continuous and direct contact with said foam layer and said paper stock layer, wherein said foam layer is heat laminated foam formed from high density polyethylene, low density polyethylene, linear low density polyethylene, or oriented polypropylene.”* (Emphasis added) Accordingly, this rejection should be withdrawn.

Applicants submit that the prior art of record does not teach or suggest each and every limitation of even the independent claims of the present application. Accordingly, these rejections based upon the Fumel et al. reference should be withdrawn and the present application should be passed to Issue. Further, Applicants submit that one could not modify the Fumel et al. reference to read upon the claimed invention without clearly altering the structure of the Fumel et al. container so that it would no longer function to achieve its intended purpose. Accordingly, these rejections should be withdrawn and the present application should be passed to Issue.

Applicants submit that the Examiner's report of the interview conducted on April 7, 2004 is adequate for the purposes of reporting the substance of the

personal interview. However, the following additional comments are provided hereinafter as representative of arguments made before the Examiner during the personal interview conducted on April 7, 2004.

Fumel et al.'s rigid polystyrene solvent adhered to a substrate does not teach melt extrusion or melt fusion of polyethylene or polypropylene to a paper stock. In contrast, Applicants provide a print receptive surface on the exterior of the cup. Additionally, the film layer in the interior of the cup or container stock material sandwiching the foam layer, provides a way of precluding fluid migration into the foam cells. Applicants submit that the Examiner has misinterpreted the Fumel et al. reference as this reference clearly does not teach or suggest the polyethylene barrier film layer of the claimed invention and/or the heat laminated foam layer in continuous and direct contact with the polyethylene barrier film layer and the paper stock layer.

For example, Fumel et al. teach bonding completely different material, a rigid polystyrene, acrylic methacrylic and other rigid high polymers to paper or cellulosic web relying on a bonding adhesive. The bonding adhesive is in fact a two or three element adhesive of particles of the same rigid high polymer as the polymer layer and a water dispersible plasticizer or latex, together with hydrocarbon solvent. Therefore, the Fumel et al. reference does not teach or suggest the polyethylene barrier film layer or the heat laminated foam layer of

the claimed invention, including the unique structural orientation of the these layers in the claimed invention.

Fumel et al. primarily works with planks of polystyrene, gluing paper to polystyrene with a three component adhesive of polystyrene particles, monomer and solvent. Specifically, Fumel et al. teaches a cure time or set time for adhesion of a few hours, e.g., see Col. 3 line 35 of Fumel et al. Therefore, the materials, construction and method are commercially impractical and are therefore not analogous to the claimed invention as alleged by the Examiner. The Examiner is reminded that Fumel et al. describes technology that is nearly 30 years old and is quite different from the cup manufacturing processes employed currently. Accordingly, Applicants submit that cups described by Fumel et al. are currently not available in commercial markets as they are impractical to manufacture and are inferior compared to Applicants claimed invention.

For example, current commercial cup manufacturing processes produce 200 to 300 cups per minute. Fumel et al's polystyrene that is glued to paper not only suffers from long cure times, but also suffers from other drawbacks as well relating to its commercial non-acceptance. Polystyrene will not heat seal to paper. Accordingly, Fumel et al. introduces a solvent based glue. The seam on Fumel et al.'s cup has to be adhesively coated. A glued seam in a

commercial production facility making 200 cups per minute is commercially impractical as it does not enable sufficient set time for the glued seam. Further, a polystyrene based cup using a glued seam or polystyrene to paper heat sealed seam is prone to delamination and leakage. Therefore, it would be impractical to employ glued seams in a commercial cup making process. Further, cure times with curable adhesives are impractical at such velocities (200 cups per minute), e.g., the starting and stopping of hot melt adhesive applicators at such velocities is also impractical.

Applicants submit that the poor adhesion properties of polymers such as polyethylene or polypropylene to glues and latexes are well known. Therefore, Fumel et al. clearly sidesteps or avoids any aspect of working with applicants' materials by using rigid polymers such as polystyrene, acrylic and methacrylic polymers. Accordingly, Fumel et al. does not teach or implicitly suggest the use of the unique foam layer of the claimed invention, e.g., of polyethylene or polypropylene. Fumel et al. also does not teach melt extrusion or melt adherence, nor does Fumel et al. teach lamination by use of a polyethylene film layer sandwiched between the paper stock layer and the heat laminated foam layer.

Fumel et al.'s laminate based on solvent dissolution of particles of the polymeric substrate, typically polystyrene, does not anticipate applicants'

invention as alleged by the Examiner. Fumel et al. solute involves use of environmentally disfavored Volatile Organic Compounds (VOC's) such as benzene, toluene xylene, styrene, vinyl toluene, brominated hydrocarbons, carbon tetrachloride, dioxane, furans, organic phosphorus compounds and the like (see col. 5 lines 50-68). Fumel et al. adhesively bonds a polystyrene foam to a porous substrate by use of an adhesive dispersed together with solute polymer particles in a solvent. Accordingly, this rejection should be withdrawn.

Geddes does not contemplate the feasibility or desirability of positioning a foam layer along an interior surface of the paper stock layer. Neither Fumel et al. nor Geddes ever use a polyethylene barrier film layer to extrusion adhere polyethylene or polypropylene foam to the interior surface of a paper stock. Instead, Geddes relies on the moisture content of the paperboard to foam a low to medium density polymer on an opposite exterior surface of the paperboard. The foaming step is a time intensive process. Printing applied to the exterior of the Geddes cup inhibits expansion of the foam and diminishes the insulating attributes of the foam layer on the external surface. Geddes does not teach applicants' solution where insulating aspects are not diminished or sacrificed in the process of decorative printing.

Neither Geddes nor Fumel et al. alone or together teach sandwiching a polyethylene barrier film layer between a paper stock layer and a heat

laminated foam layer. Neither Geddes nor Fumel et al. ever suggest positioning polyethylene or polypropylene foam along an interior surface.

The Examiner has rejected claim 10 under 35 U.S.C. §103(a) relying on Fumel et al. However, Fumel et al. never teaches or suggests positioning polyethylene or polypropylene extruded foam interior in the cup either in one layer or in multiple layers. Fumel et al. solvent adheres styrene, acrylic or methacrylic material, and does not teach polyethylene or polypropylene extrusion lamination onto an interior surface.

In col. 4, lines 45-56 of Fumel et al., the *adhesive* (the major component, namely polymeric particles dispersed in the adhesive composition) is not a solid polyethylene barrier film but a two or three element adhesive of particles of the same rigid polymer as the polymer layer blended with organic solvent and water dispersible plasticizer or latex. *See Fumel et al.* column 4 lines 22 to line 28, and *see* claim 1 of Fumel et al.

With respect to the rejection of claims 20-21 and 23-24 under 35 U.S.C. §103(a) relying on Fumel et al., Geddes and Neale, none of Fumel et al., Geddes or Neale alone or together teach heat lamination of polyethylene foam to a paper substrate. Neale uses a solvent dispersion to form an expandable foam on the exterior. Fumel et al. solvent adheres a polystyrene to a cup using an adhesive. Geddes does not teach a polyethylene or polypropylene layer to

extrusion adhere or melt adhere a polyethylene or polypropylene foam to the interior surface of a paper stock.

Applicants submit that the Examiner's basis of modifying the Fumel et al. reference is that it would have been obvious to one of ordinary skill in the art to replace the alleged foam layer of Fumel et al. with that of the remaining references of the prior art of record. Specifically, the Examiner is basing this assumption on the position that a foam layer formed by heat lamination results in little difference. This position is respectfully traversed.

Applicants' disagree with Examiner that a foam layer extruded or laminated yields identical foams. The prior art laminates with solvent adhesives. Such processes yield a laminate that perform significantly different than an extruded or melt adhered laminate. Adhesive seams are incompatible with high speed cup forming speeds. Fumel et al. relies on organic solvents. Neale teaches a water dispersion coating of foamable void containing particles. Geddes teaches foaming polyethylene material that is formed on an exterior surface by relying on residual moisture in the paper stock to act as a blowing agent. Accordingly, this rejection should be withdrawn.

In accordance with the above discussion of the patents relied upon by the Examiner, Applicants respectfully submit that these documents, either in

combination together or standing alone, fail to teach or suggest the invention as is set forth by the claims of the instant application.

Accordingly, reconsideration and withdrawal of the claim rejection are respectfully requested. Moreover, Applicants respectfully submit that the instant application is in a condition for allowance.

As to the dependent claims, Applicants respectfully submit that these claims are allowable due to their dependence upon an allowable independent claim, as well as for additional limitations provided by these claims.

CONCLUSION

Since the remaining references cited by the Examiner have not been utilized to reject the claims, but merely to show the state-of-the-art, no further comments are deemed necessary with respect thereto.

All the stated grounds of rejection have been properly traversed and/or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently pending rejections and that they be withdrawn.

It is believed that a full and complete response has been made to the Office Action, and that as such, the Examiner is respectfully requested to send the application to Issue.

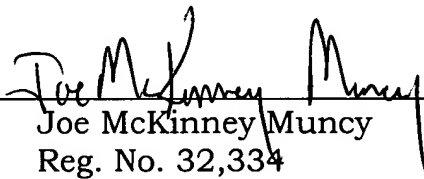
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In the event there are any matters remaining in this application, the Examiner is invited to contact Matthew T. Shanley, Registration No. 47,074 at (703) 205-8000 in the Washington, D.C. area.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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